V3.0 Level 2 Data Release RetQAFlag

All Level 2 AIRS/AMSU/HSB products include a full swath data field named **RetQAFlag**. Users are strongly advised to use this 16-bit unsigned integer as an aid to data selection.

The best practice for selecting data to be included in scientific analyses is to avoid any field-of-view for which the RetQAFlag is non-zero.

All data are released to the public. However, the validation of retrieval algorithms and products has been carried out in this initial Level 2 release only in the case of those data that satisfy the following conditions

- Low Latitude (within the latitude range 40° South to 40° North)
- Ocean (land fraction in the AMSU field of view is less than 0.01)
- Retrieved SST agrees with NCEP analysis to within 3.0 K
- Sun glint avoided (glint distance greater than 200 km)

Only full retrieval results satisfying these conditions should be considered for scientific analysis. Researchers can easily limit their selection of Level 2 data products to those satisfying these conditions by using the included **RetQAFlag**. All fields-of-view whose **RetQAFlag** is zero satisfy these criteria.

The following table identifies each bit currently being used in **RetQAFlag**.

- Bits 0, 1, 2, 3, 4 are set in the case of a partial or rejected retrieval
- Bit 8 is set in this release version if a field-of-view is not an oceanic FOV located in the low latitude range, $|lat| \leq 40°$.
- Bit 9 is set if the retrieved SST deviates from the NCEP forecast by more than 3 K.

BIT	VALUE	MEANING IF SET
0	1	MW-only retrieval stage rejected or not attempted
1	2	Initial Cloud Clearing rejected or not attempted
2	4	First Guess Regression rejected or not attempted
3	8	Final Cloud Clearing rejected or not attempted
4	16	Final Physical Retrieval rejected or not attempted
5	32	[currently spare, and set = 0]
6	64	[currently spare, and set = 0]
7	128	[currently spare, and set = 0]
8	256	Record Type Not Yet Validated
9	512	Ocean FOV rejected because ABS(Tsurf_ret - SST_NCEP_forecast) > 3 K
10	1024	[currently spare, and set = 0]
11	2048	[currently spare, and set = 0]
12	4096	[currently spare, and set = 0]
13	8192	[currently spare, and set = 0]
14	16384	[currently spare, and set = 0]
15	32768	[currently spare, and set = 0]